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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/815,403

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Danny S. Barlow

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7590

04/05/2006

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EXAMINER

TON, MY TRANG

ART UNIT

PAPER NUMBER

2816

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/815,403

Applicant(s)

BARLOW, DANNY S.

Examiner

My-Trang N. Ton

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


MY-TRANG NUTON
PRIMARY EXAMINER

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The Amendment filed on 1/13/06 has been received and entered in the case. In response to the Amendment, the rejection made in the last Office action on the Diba reference is withdrawn. A new Office action has been made as follows:

Claim Rejections - 35 USC § 112

Claims 18 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 18, the limitation "the second terminal of the **first** transistor" recited in last two lines of claim 18 is misdescriptive of the present invention since such limitation is not seen as recited therein. It is suggested that "first transistor" should be replaced with – **second** transistor --.

In claim 20, the limitation "a second inverter ... couples to the output of the first inverter" is misdescriptive of the present invention since claims 15-18 are now referred to Fig. 3. Insofar as understood, the limitation "the second inverter" only shown in Fig. 6.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1- 4, 6-8, 10-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Tailliet (U.S Patent No. 6,549,048) cited in previous PTOL 892.

Tailliet discloses in fig. 3 a threshold amplifier including:

a first feedback path having a first transistor (T5) with a gate terminal coupled to the output node (Vout) and with a second terminal coupled to the ground node (Vss) to determine one of the voltage thresholds;

a second feedback path having a second transistor (T6) with a gate terminal coupled to the output node (Vout) and with a second terminal coupled to the power supply voltage node (Vcc) to determine a remaining one of the voltage thresholds; and

at least one diode (T302 functions as a diode since the gate and drain terminal of T302 both connected to Vss) coupled to a path selected from the first feedback path (path connected to T5) and the second feedback path (path connected to T6) such that an on-current through the selected path is reduced as a supply voltage for the Schmitt trigger is reduced (due to the same structure as recited in the claims, ostensibly the same function (on current through the selected path...) is achieved) as recited in claim 1.

Regarding claim 2: the Schmitt trigger is a CMOS Schmitt trigger (1).

Regarding claim 3: the selected path is the first feedback path (path connected to T5).

Regarding claim 4: a first transistor comprises a first PMOS transistor (T5) having its second terminal coupled to the at least one diode (T302) and wherein the second transistor comprises a first NMOS transistor (T6).

Regarding claim 6: the second terminal of the first PMOS transistor (T5) is a drain terminal, the at least one diode (T302) coupled between the drain terminal and the ground node (Vss).

Regarding claim 7: the selected path is the second feedback path (path connected to T6).

Regarding claim 8: the second transistor comprises a first NMOS transistor (T6) having its second terminal coupled to the at least one diode (T312 functions as a diode since the gate and drain terminals of T312 both connected to Vcc) and wherein the first transistor comprises a first PMOS transistor (T5).

Regarding claim 10: the second terminal of the first NMOS transistor (T6) is a drain terminal, the at least one diode (T312) coupled between the drain terminal and the power supply voltage node (Vcc).

Regarding claim 11: elements T1, T2 read on second and third PMOS transistors and elements T3, T4 read on second and third NMOS transistors all coupled in series between the power supply voltage node (Vcc) and the ground terminal (Vss).

The method recited in claims 12-14 are inherent to the operation of the Schmitt trigger circuit of Tailliet: a diode (T302 functions as a diode since both gate and drain terminals of T302 connected to Vss), first feedback path (path connected to T5). Due to the same structure as recited in the claims, ostensibly the same function (on current through the first feedback path...) is achieved.

Claim 15 is similarly rejected as above claim 1:

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a first feedback path having a first transistor (T5) with a gate terminal coupled to the output node (Vout) and with a second terminal coupled to the ground node (Vss) to determine one of the voltage thresholds;

a second feedback path having a second transistor (T6) with a gate terminal coupled to the output node (Vout) and with a second terminal coupled to the power supply voltage node (Vcc) to determine a remaining one of the voltage thresholds; and

means for reducing an on current (T302) through a path selected from the first feedback path (path connected to T5) and the second feedback path (path connected to T6) as a supply voltage for the Schmitt trigger is reduced.

Regarding claim 16: the selected path is the second feedback path (path connected to T6) and the means for reducing the on current comprises at least one diode (T312 functions as a diode since both gate and drain terminals connected to Vcc).

Regarding claim 17: the at least one diode comprises a diode-connected PMOS transistor (T312).

Regarding claim 18: the diode-connected PMOS transistor (T312) couples between the power supply voltage node (Vcc) and the second terminal of the second transistor (T6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tailliet.

As stated above, every element of the claimed invention recited in above claims can be seen in the circuit of Tailliet. However, this reference does not show "a first diode and a second diode" (claims 5 and 9); "a second inverter" (claim 20).

Regarding "a first diode and a second diode" recited in claims 5 and 9, this limitation appears to be obvious: mere duplication of parts is not patentably distinct. In re Haza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use more than one diode (the second diode) in the Schmitt trigger of Tailliet since mere duplication of parts is not patentably distinct.

Regarding the limitation recited in claim 20: elements T1-T4 read on "a first inverter". Regarding "a second inverter" limitation, it is old and notoriously well known in the art that the inverters are used as buffering or signal inverting purposes. Therefore, it would have been obvious at the time the invention was made for one skilled in the art to incorporate the second inverter to the Schmitt trigger circuit of Tailliet for buffering or level inverting purposes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Trang N. Ton whose telephone number is 571-272-1754. The examiner can normally be reached on 7:00 a.m - 5:30 p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



My-Trang N. Ton
Primary Examiner
Art Unit 2816

April 3, 2006